

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) An image processing system for generating at least one output image associated with an output viewpoint from an input image associated with an input viewpoint through a depth-dependent transformation; the images being represented as an input pixel array and an output pixel array, respectively; the image processing system comprising:

[[-]] an input for receiving (i) the input image and (ii) a hidden image, the input image (i)(a) being a pre-filtered 2D representation of 3D objects as seen from the input viewpoint, and (i)(b) comprising for each input pixel an associated input pixel value and an associated input pixel depth, the hidden image (ii)(a) being another 2D representation of the 3D objects and (ii)(b) comprising information, for each hidden image pixel an associated hidden image pixel value and an associated hidden image pixel depth, which information is at least partly occluded from the input viewpoint;

[[-]] a video processor being operative to create output pixels of the output image by:

transforming each input pixel of the input image to a transformed input pixel, associated with the output viewpoint, as a function of the input pixel depth, and

creating the output image based on the transformed input pixels of the input image, using (iii) hidden image pixels (iii)(a)

for filling de-occluded areas of the transformed input pixels of the input image and (iii)(b) for filling at least one pixel position adjacent to the de-occluded areas of the transformed input pixels of the input image (iii)(c) to create enlarged de-occluded areas filled with pixels of the hidden image for preventing ghost line artifacts, caused by transformation of the pre-filtered input image; and

[[-]] an output for providing the output image for subsequent rendering.

2. (Currently Amended) ~~An~~The image processing system as claimed in claim 1, wherein the depth-dependent transformation is a transformation from the input viewpoint to a predetermined output viewpoint and wherein the hidden image is associated with the output viewpoint.

3. (Currently Amended) ~~An~~The image processing system as claimed in claim 1, wherein the hidden image is associated with the input viewpoint and the hidden image pixels are associated with a hidden image pixel value and a hidden image pixel depth, the video processor being operative to:

[[-]] transform each hidden image pixel to a transformed hidden image pixel, associated with the output viewpoint, as a function of the hidden image pixel depth; and

[[-]] create the output image using transformed hidden image pixels for filling de-occluded areas and for at least one pixel position adjacent to the de-occluded areas.

4. (Currently Amended) ~~An~~ The image processing system as claimed in claim 1, wherein rows of pixels of the pixel arrays are used for horizontal display on successive display lines and the video processor is operative to sequentially process input pixels per row of corresponding pixel arrays of the input image and the hidden image.

5. (Currently Amended) ~~An~~ The image processing system as claimed in claim 4, wherein said image processing system further comprising comprises:

 pixel selection means for sequentially selecting input pixels per row, selecting

(a) a hidden image pixel for:

[[-]] (a)(1) pixel positions in a de-occluded area;

[[-]] (a)(2) pixel positions defined by a first number of pixel positions before the de-occluded area; and

[[-]] (a)(3) pixel positions defined by a second number of pixel positions after the de-occluded area,

wherein one selected from the group consisting of (i) the first number, (ii) the second number, and (iii) both the first number and the second number is greater than zero; and

(b) transformed input pixels for other pixel positions on the display line.

6. (Currently Amended) ~~An~~The image processing system as claimed in claim 5, wherein the one selected from the group consisting of (i) the first number, (ii) the second number, and (iii) both the first number and second number of pixel positions is dependent on a width of a horizontal pre-filter, used during recording of the input image.

7. (Currently Amended) ~~An~~The image processing system as claimed in claim 5, wherein the one selected from the group consisting of (i) the first number, (ii) the second number, and (iii) both the first number and second number of pixel positions is received at the input as additional information about the input image.

8. (Currently Amended) ~~An~~The image processing system as claimed in claim 5, wherein the one selected from the group consisting of (i) the first number, (ii) the second number, and (iii) both the first number and second number of pixel positions is determined based on an analysis of the input image.

9. (Currently Amended) ~~An~~The image processing system as claimed in claim 5, each input pixel being indicated by an x-coordinate and an y-coordinate, the video processor being operative

to sequentially process input pixels of a row in a direction opposite to a displacement from the input viewpoint to the output viewpoint along the x-axis; the processing including:

[[-]] maintaining an x-coordinate extent that indicates for already processed input pixels with respect to a predetermined start position a furthest x-coordinate already occluded by at least one transformed input pixel, where the furthest x-coordinate is a highest x-coordinate if the processing direction is from left to right and a lowest x-coordinate if the processing direction is from right to left; and

[[-]] maintaining a look ahead extent for determining ahead of the x-coordinate extent that a hidden image pixel is de-occluded if a transformed input pixel increases the look ahead extent by more than a predetermined threshold for enabling the pixel selection means to select a hidden image pixel for the first number of pixel positions before the position of the de-occluded area.

10. (Currently Amended) ~~An~~ The image processing system as claimed in claim 3, wherein the video processor is operative to maintain a hidden image x-coordinate extent for indicating for already processed hidden image pixels with respect to a predetermined start position a furthest x-coordinate already occluded by at least one transformed hidden image pixel, where the furthest x-coordinate is a highest x-coordinate if the processing direction is from left to right and a lowest x-coordinate if the processing direction is from right to left.

11. (Currently Amended) ~~An~~The image processing system as claimed in claim 9, wherein the look ahead extent is a number of pixels ahead of the x-coordinate extent, ~~which said number is being~~ equal to a number of transformed hidden image pixels to be inserted before the position of the de-occluded area.

12. (Currently Amended) ~~An~~The image processing system as claimed in claim 1, wherein the input is arranged for receiving at least one additional hidden image, the additional hidden image comprising information, ~~which said information is being~~ at least partly hidden by objects in other hidden images, and the video processor being operative to create output pixels of the output image dependent on the depth dependent transformation, the input image, the hidden image and the at least one additional hidden image.

13. (Currently Amended) A method for generating, via an image processing system, at least one output image associated with an output viewpoint from an input image associated with an input viewpoint through a depth-dependent transformation; the images being represented as an input pixel array and an output pixel array, respectively; the method comprising:
[[-]] receiving, via an input of the image processing system, (i) the input image and (ii) a hidden image, (i) (a) the input image being a pre-filtered 2D representation of 3D objects as seen from

the input viewpoint, and (i)(b) comprising for each input pixel an associated input pixel value and an associated input pixel depth, the hidden image (ii)(a) being another 2D representation of the 3D objects and (ii)(b) comprising information, which information is at least partly occluded from the input viewpoint;

[[-]] creating, via a video processor of the image processing system output pixels of the output image by:

transforming each input pixel of the input image to a transformed input pixel, associated with the output viewpoint, as a function of the input pixel depth, and

creating the output image based on the transformed input pixels of the input image, using (iii) hidden image pixels (iii)(a) for filling de-occluded areas of the transformed input pixels of the input image and (iii)(b) for filling at least one pixel position adjacent to the de-occluded areas of the transformed input pixels of the input image (iii)(c) to create enlarged de-occluded areas filled with pixels of the hidden image for preventing ghost line artifacts, caused by transformation of the pre-filtered input image; and

providing the output image for subsequent rendering.

14. (Currently Amended) A non-transitory computer-readable media embedded with a computer program having program instructions operative to cause a processor to perform the method as claimed in claim 13, when executed by the processor.

15. (Currently Amended) ~~An~~The image processing system as claimed in claim 9, wherein the video processor is operative to maintain a hidden image x-coordinate extent for indicating for already processed hidden image pixels with respect to a predetermined start position a furthest x-coordinate already occluded by at least one transformed hidden image pixel, where the furthest x-coordinate is a highest x-coordinate if the processing direction is from left to right and a lowest x-coordinate if the processing direction is from right to left.

16. (Currently Amended) ~~An~~The image processing system as claimed in claim 15, wherein the look ahead extent is a number of pixels ahead of the x-coordinate extent, which number is equal to a number of transformed hidden image pixels to be inserted before the position of the de-occluded area.